PM Gearless Elevator

iris™

IRIS enhancing the value of the building...

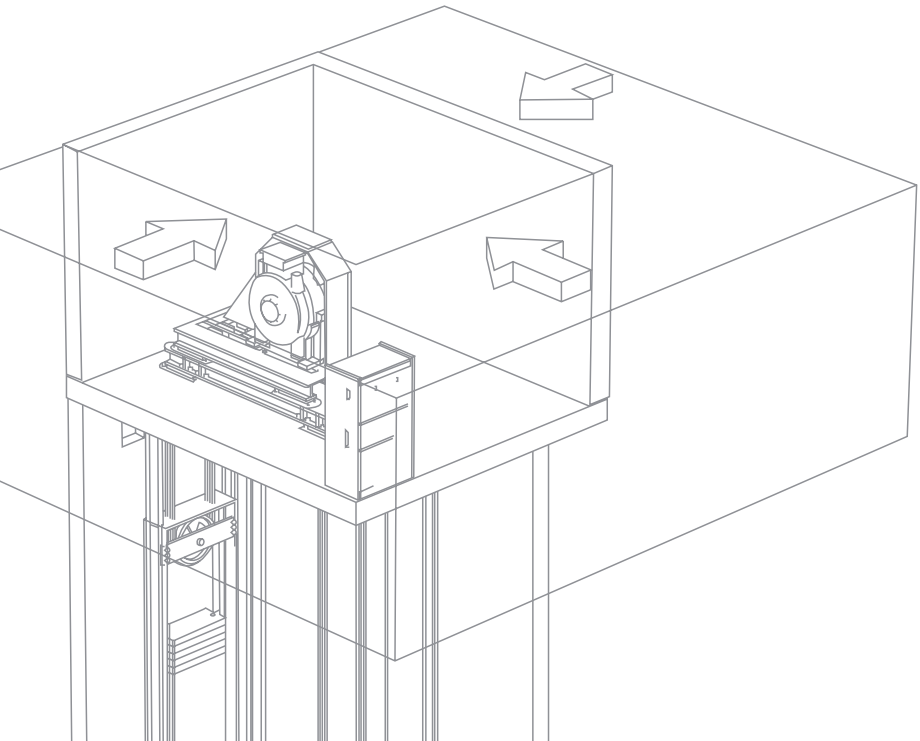
IRIS maximizing energy savings

IRIS enabling environment protections

IRIS pursuing space savings

IRIS providing ride comfort

IRIS ensuring safety & reliability



SIGMA

SIGMA Your partner for Elevator

IRIS™

IRIS is the rainbow goddess in Greek mythology

IRIS represents **High Quality**, **Excellent Aesthetic Design**, **Short Delivery** and **Best Service**

Revolutionary PM Gearless Elevator

Development Concept

Groundbreaking low & mid speed elevators substitute the Geared Machine with highly efficient Gearless Machine that adopts Permanent Magnet Synchronous Motor(PMSM) and exclusive PMSM controller

Coverage

- Speed : 1.0 ~ 2.5m/s
- Duty : Up to 1,600kg
- Stops : Up to 32stops (1.0 ~ 1.75m/s)
  Up to 40stops (2.0 ~ 2.5m/s)

Main Features

- Green Elevator
  - Energy Savings
  - Environment Protections
  - Space Savings
- Ride Comfort
- Safety and Reliability

Green Elevator : IRIS

Sigma's goal of green product includes compliance with stringent environmental standards.

Accordingly, our approach to an environmentally acceptable product design requires careful consideration of the entire product life cycle from design to production, and has better solutions for people.

Energy Savings

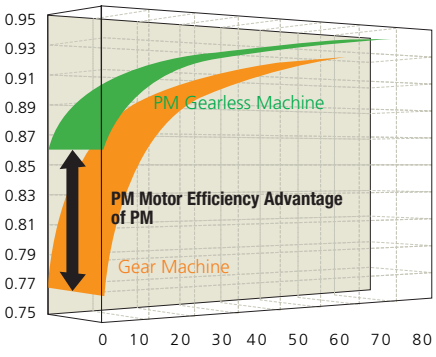
IRIS pursues cost savings of building power supply by reducing the capacity of electical facility required for the operation of the elevator.

High Motor Efficiency

By using permanent magnet(PM) gearless motor, IRIS improves motor efficiency.

Lower Power Consunptiom

Compact motor design enables IRIS to lower initial electricity load and power consumption. It also allows IRIS to reduce heat from the motor.



Evironment Protections

No need for lubricant oil

By using PM Gearless, IRIS is free from lubricate oil for the gear box. This enables us not only to reduce maintenance cost but also to keep machineroom cleaned.

EMC filters

IRIS uses EMC filters which meet CISPR public 22 class. It minimizes interference from electrical and electronic equipment like home appliances in the building.

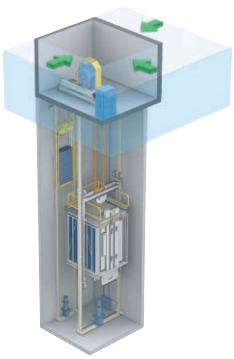
Space Savings

Compact machine

Customers may benefit 1/3 space from a smaller size.

Flexible space design and utilization

IRIS enables architects to design building structure flexibly and use building space efficiently.



Ride Comfort

Gearless system

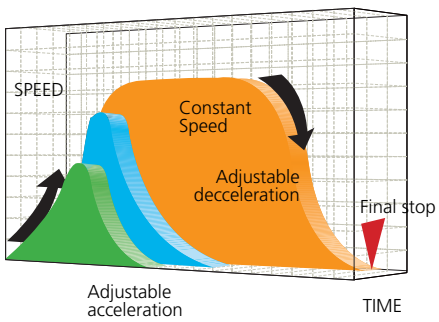
The absense of gearbox allows to eliminate noise from gear friction. Its coaxial transmission also reduces vibration and noise effectively.

Controller design for lower noise

Low noise is possible by applying high frequency of 8kHz for synchronous motor controller.

Smooth Operation

IRIS adopts VVVF(Variable Voltage Variable Frequency)control with 5th generation IPM and IGBT, and is designed for low vibration.



PM Gearless Elevator : IRIS

SIGMA`s cutting-edge gearless technology is favored to suit contemporary buildings.

IRIS enables the value of the building to increase with its new concepts.

Safety and Reliability

Flexible CPU

Totally digitally design applying 32bit DSP(Digital Signal Processor) or PM motor speed control.

Easy Maintenance

Operation history log, mal-function analyzing system applied.

Guaranteed Reliability

HALT(Highly Accelerated Life Test) on parts to decrease defects and increase life span of parts.

Full power reserve of motor

A sufficrent power reserve will ensure safer and more reliable operation of the elevator.

EMI Test
(Electro Magnetic Interference)

Vibration and Dropping Test

ESD Test
(Electro Static Discharge)

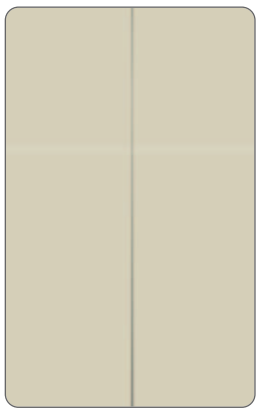
Burst Test

ISO 9001 ISO 14001

Basic Line

Specification

Ceiling	C-HX2
OPB	CBM-10C
Wall	Steel painted finish (No. DSP-002W)
Door	Steel painted finish (No. DSP-002W)
Handrail	HR-01 (Stainless steel)
Floor	Deco Tile (Local)



Cool Line

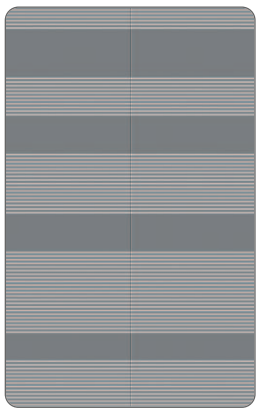
Specification

Ceiling	C-32A
OPB	CBM-10C
Wall	STS Hairline
Door	STS Hairline
Handrail	HR-04
Floor	Deco Tile (Local)

Modern Line

Specification

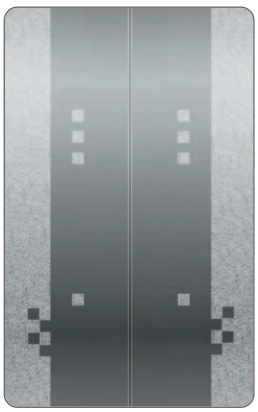
Ceiling	C-HX3
OPB	CBM-31
CPI	CID-10
Wall	STS Hairline Etching (No. DSE-006W)
Door	STS Hairline Etching (No. DSE-006D)
Handrail	HR-04
Floor	Deco Tile (Local)



Natural Line

Specification

Ceiling	C-HX2
OPB	CBM-10C
Wall	STS Hairline Etching (No. DSE-019W)
Door	STS Hairline Etching (No. DSE-019D)
Handrail	HR-04
Floor	Deco Tile (Local)



Entrance Designs

◆◆ Specification 1 ◆◆

Jamb • Narrow Jamb in Painted Steel Sheet (No. DSP-004W)
Door • Painted Steel Sheet (No. DSP-004W)
Sill • Extruded Hard Aluminum
Hall Indicator & Button • VID-M432

◆◆ Specification 2 ◆◆

Jamb • Wide Jamb in STS Hairline
Door • STS Hairline
Sill • Extruded Hard Aluminum
Hall Indicator & Button • VID-M432

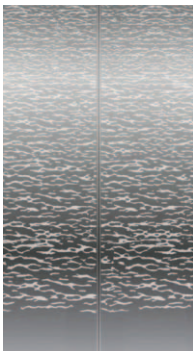
◆◆ Specification 3 ◆◆

Jamb • Wide Tapered Jamb with Transom Panel
STS Hairline finish
Door • STS Hairline Etching (No. DSE-0190D)
Sill • Extruded Hard Aluminum
Hall Indicator • HID-A122
Button • HBM-S43

Etching Patterns & Colors

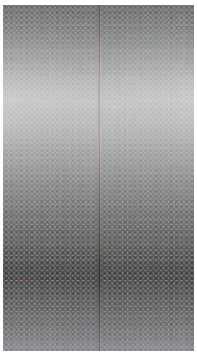
Etching Pattern

DSE-001D / DSE-001W

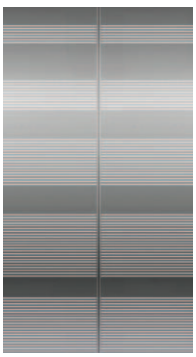


DSE-002D / DSE-002W

DSE-003D / DSE-003W



DSE-004D / DSE-004W



DSE-006D / DSE-006W

DSE-015D / DSE-015W

DSE-016D / DSE-016W

DSE-019D / DSE-019W

• DSE-***D : Etching Pattern for Car / Landing door

• DSE-***W : Etching Pattern for Car wall

Painted Steel Sheet Color

DSP-001W

DSP-002W

DSP-003W

DSP-015C

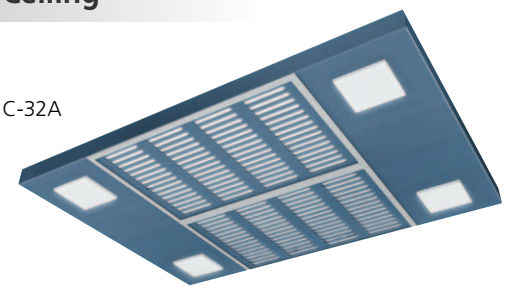
DSP-017C

• Actual colors may be different from these prints.

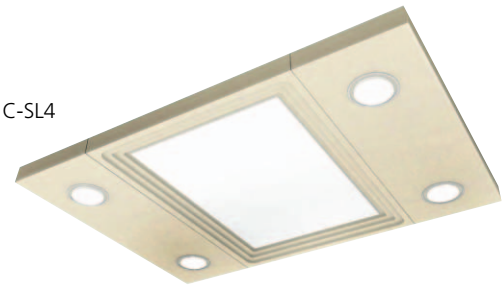
Fixtures

Ceiling

C-32A



C-SL4



C-HX2

C-HX3

C-MX3

Car Operating Panel

CBM-10C

CBM-31

Hall Button

HBM-S43

VID-M432

VID-M432T

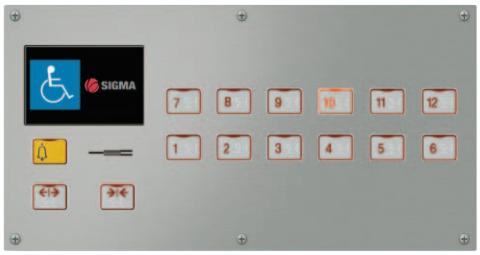
HBM-S42

VID-M422

VID-M422T

Fixtures

Handicapped COP



CBM-42SH

Hall Lantern

HLV-C08

HLV-630

HLV-C11

Hall Position Indicator

HID-A122

HID-A132

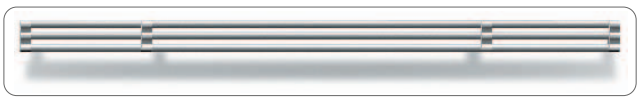
HID-C132

Car Position Indicator

CID-10

CID-12

Handrail



HR-01

HR-02

HR-04

Observation

1 Side View

OA 01

OA 02

OA 03

2 Side View & 3 Side View

OB 01

OC 01

OC 03

3 Side View

OD 01

OD 02

Observation

Round View

OR 01

OR 02

OR 03

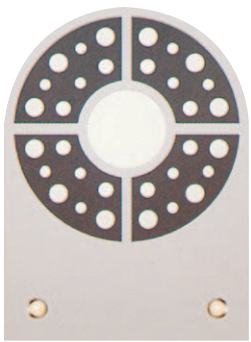
OR 04

OR 05

OR 06

Ceiling (Round View)

OP 01D



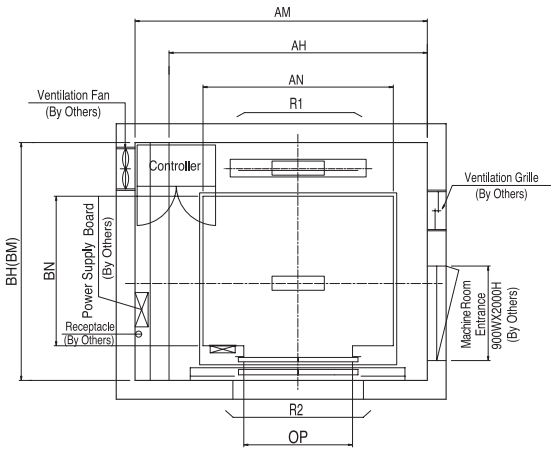
OP 02D

OP 03D

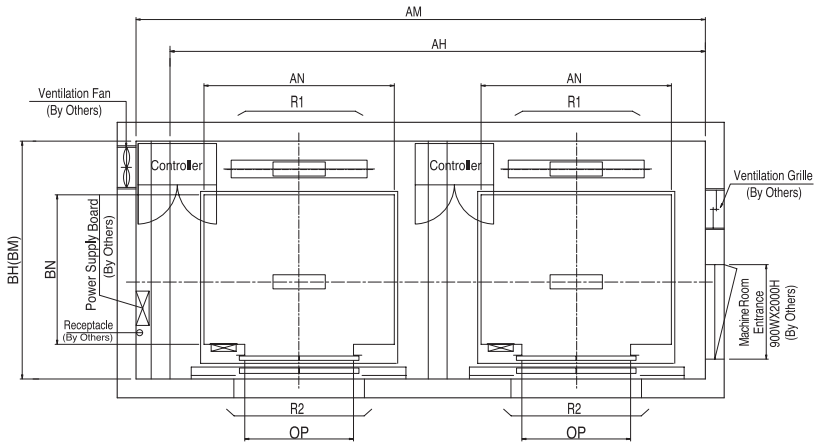
Technical Data | Passenger |

Hoistway & Machine Room Plan

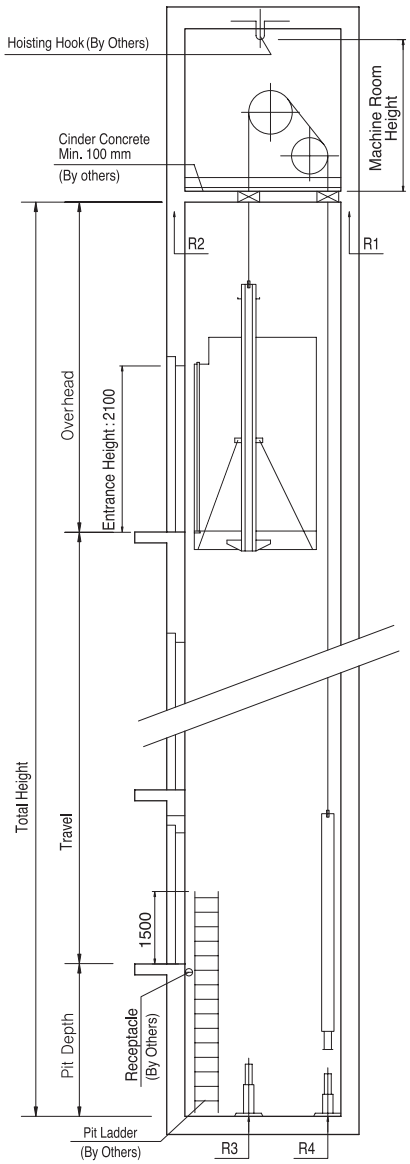
[Simplex]



[Duplex]



Hoistway Section



Overhead, Pit & Machine Room Height

Speed (m/s)	Load (kg)	Travel (m)	Overhead (mm)	Plt Depth (mm)	Machine Room Height (mm)	Hook Load (kg)
1.0	450 ~ 1000	TR ≤ 100	4200	1400	2300	3000
	1150 ~ 1600		4400	1400	2000	4500
1.5	450 ~ 1000		4400	1450	2300	3000
	1150 ~ 1600			1500	2000	4500
1.75	450 ~ 1000		4500	1600	2300	3000
	1150 ~ 1600			1650	2000	4500
2.0	750 ~ 1600	TR ≤ 130	5100	1900	2000	4500
2.5	750 ~ 1600		5300	2200	2000	4500

Technical Data | Passenger |

Layout Dimensions (Speed : 1.0m/s)

[Standard]

Unit : mm

Speed (m/s)	Capacity		Entrance Opening (mm)	Car Size		HoistWay Size		Machine Room Size		Reaction Load(kg)			
				Inside	Outside	Simplex	Duplex	Simplex	Duplex	Machine Room		Pit	
	Persons	Load(kg)		AN × BN	AS × BS	AH × BH	AH × BH	AM × BM	AM × BM	R1	R2	R3	R4
1.0	6	450	800	1400×850	1450×1015	1850×1500	3900×1500	1850×1500	3900×1500	3600	2000	4920	3930
	8	550	800	1400×1030	1450×1195	1850×1700	3900×1700	1850×1700	3900×1700	4200	2800	7060	5850
	9	600	800	1400×1100	1450×1265	1850×1750	3900×1750	1850×1750	3900×1750	4500	3100	7340	6020
	10	680	800	1400×1250	1450×1415	1850×1900	3900×1900	1850×1900	3900×1900	4900	3400	7860	6370
	11	750	800	1400×1350	1450×1515	1850×2000	3900×2000	1850×2000	3900×2000	5250	3700	8690	6930
	13	900	900	1600×1350	1650×1515	2050×2000	4300×2000	2050×2000	4300×2000	5750	4100	9430	7450
	15	1000	900	1600×1500	1650×1665	2050×2150	4300×2150	2050×2150	4300×2150	6150	4600	10210	8010
	17	1150	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	20	1350	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	24	1600	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

[EN Code]

1.0	6	450	800	1400×850	1450×1015	1850×1500	3900×1500	1850×1500	3900×1500	3600	2000	4920	3930
	7	525	800	1400×1030	1450×1195	1850×1700	3900×1700	1850×1700	3900×1700	4200	2800	7060	5850
	8	600	800	1400×1100	1450×1265	1850×1750	3900×1750	1850×1750	3900×1750	4500	3100	7340	6020
	9	675	800	1400×1250	1450×1415	1850×1900	3900×1900	1850×1900	3900×1900	4900	3400	7860	6370
	10	800	800	1400×1350	1450×1515	1850×2000	3900×2000	1850×2000	3900×2000	5250	3700	8690	6930
	12	900	900	1600×1350	1650×1515	2050×2000	4300×2000	2050×2000	4300×2000	5750	4100	9430	7450
	13	1000	900	1600×1500	1650×1665	2050×2150	4300×2150	2050×2150	4300×2150	6150	4600	10210	8010
	16	1200	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	18	1350	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	21	1600	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

[Malaysia Code]

1.0	6	450	800	1400×850	1450×1015	1850×1500	3900×1500	1850×1500	3900×1500	3600	2000	4920	3930
	8	545	800	1400×1030	1450×1195	1850×1700	3900×1700	1850×1700	3900×1700	4200	2800	7060	5850
	9	615	800	1400×1100	1450×1265	1850×1750	3900×1750	1850×1750	3900×1750	4500	3100	7340	6020
	10	680	800	1400×1250	1450×1415	1850×1900	3900×1900	1850×1900	3900×1900	4900	3400	7860	6370
	11	750	800	1400×1350	1450×1515	1850×2000	3900×2000	1850×2000	3900×2000	5250	3700	8690	6930
	13	885	900	1600×1350	1650×1515	2050×2000	4300×2000	2050×2000	4300×2000	5750	4100	9430	7450
	15	1025	900	1600×1500	1650×1665	2050×2150	4300×2150	2050×2150	4300×2150	6150	4600	10210	8010
	17	1160	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	20	1365	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	23	1565	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

Technical Data | Passenger |

● Layout Dimensions (Speed : 1.5, 1.75m/s)

[Standard]

Unit : mm

Speed (m/s)	Capacity		Entrance Opening (mm)	Car Size		HoistWay Size		Machine Room Size		Reaction Load(kg)			
				Inside	Outside	Simplex	Duplex	Simplex	Duplex	Machine Room		Pit	
	Persons	Load(kg)		AN × BN	AS × BS	AH × BH	AH × BH	AM × BM	AM × BM	R1	R2	R3	R4
1.5 ~ 1.75	8	550	800	1400×1030	1450×1195	1850×1700	3900×1700	1850×1700	3900×1700	4200	2800	7060	5850
	9	600	800	1400×1100	1450×1265	1850×1750	3900×1750	1850×1750	3900×1750	4500	3100	7340	6020
	10	680	800	1400×1250	1450×1415	1850×1900	3900×1900	1850×1900	3900×1900	4900	3400	7860	6370
	11	750	800	1400×1350	1450×1515	1850×2000	3900×2000	1850×2000	3900×2000	5250	3700	8690	6930
	13	900	900	1600×1350	1650×1515	2050×2000	4300×2000	2050×2000	4300×2000	5750	4100	9430	7450
	15	1000	900	1600×1500	1650×1665	2050×2150	4300×2150	2050×2150	4300×2150	6150	4600	10210	8010
	17	1150	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	20	1350	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	24	1600	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

[EN Code]

1.5 ~ 1.75	7	525	800	1400×1030	1450×1195	1850×1700	3900×1700	1850×1700	3900×1700	4200	2800	7060	5850
	8	600	800	1400×1100	1450×1265	1850×1750	3900×1750	1850×1750	3900×1750	4500	3100	7340	6020
	9	675	800	1400×1250	1450×1415	1850×1900	3900×1900	1850×1900	3900×1900	4900	3400	7860	6370
	10	800	800	1400×1350	1450×1515	1850×2000	3900×2000	1850×2000	3900×2000	5250	3700	8690	6930
	12	900	900	1600×1350	1650×1515	2050×2000	4300×2000	2050×2000	4300×2000	5750	4100	9430	7450
	13	1000	900	1600×1500	1650×1665	2050×2150	4300×2150	2050×2150	4300×2150	6150	4600	10210	8010
	16	1200	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	18	1350	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	21	1600	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

[Malaysia Code]

1.5 ~ 1.75	8	545	800	1400×1030	1450×1195	1850×1700	3900×1700	1850×1700	3900×1700	4200	2800	7060	5850
	9	615	800	1400×1100	1450×1265	1850×1750	3900×1750	1850×1750	3900×1750	4500	3100	7340	6020
	10	680	800	1400×1250	1450×1415	1850×1900	3900×1900	1850×1900	3900×1900	4900	3400	7860	6370
	11	750	800	1400×1350	1450×1515	1850×2000	3900×2000	1850×2000	3900×2000	5250	3700	8690	6930
	13	885	900	1600×1350	1650×1515	2050×2000	4300×2000	2050×2000	4300×2000	5750	4100	9430	7450
	15	1025	900	1600×1500	1650×1665	2050×2150	4300×2150	2050×2150	4300×2150	6150	4600	10210	8010
	17	1160	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	20	1365	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	23	1565	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

Layout Dimensions (Speed : 2.0, 2.5m/s)

[Standard]

Unit : mm

Speed (m/s)	Capacity		Entrance Opening (mm)	Car Size		HoistWay Size		Machine Room Size		Reaction Load(kg)			
				Inside	Outside	Simplex	Duplex	Simplex	Duplex	Machine Room		Pit	
	Persons	Load(kg)		AN × BN	AS × BS	AH × BH	AH × BH	AM × BM	AM × BM	R1	R2	R3	R4
2.0 ~ 2.5	11	750	800	1400×1350	1490×1535	2000×2100	4200×2100	2000×2100	4200×2100	11000	7550	10000	8300
	13	900	900	1600×1350	1690×1535	2200×2100	4600×2100	2200×2100	4600×2100	11000	7550	13250	10100
	15	1000	900	1600×1500	1690×1685	2200×2250	4600×2250	2200×2250	4600×2250	11650	7850	13950	10550
	17	1150	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	20	1350	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	24	1600	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

[EN Code]

2.0 ~ 2.5	10	800	800	1400×1350	1490×1535	2000×2100	4200×2100	2000×2100	4200×2100	11000	7550	10000	8300
	12	900	900	1600×1350	1690×1535	2200×2100	4600×2100	2200×2100	4600×2100	11000	7550	13250	10100
	13	1000	900	1600×1500	1690×1685	2200×2250	4600×2250	2200×2250	4600×2250	11650	7850	13950	10550
	16	1200	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	18	1350	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	21	1600	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

[Malaysia Code]

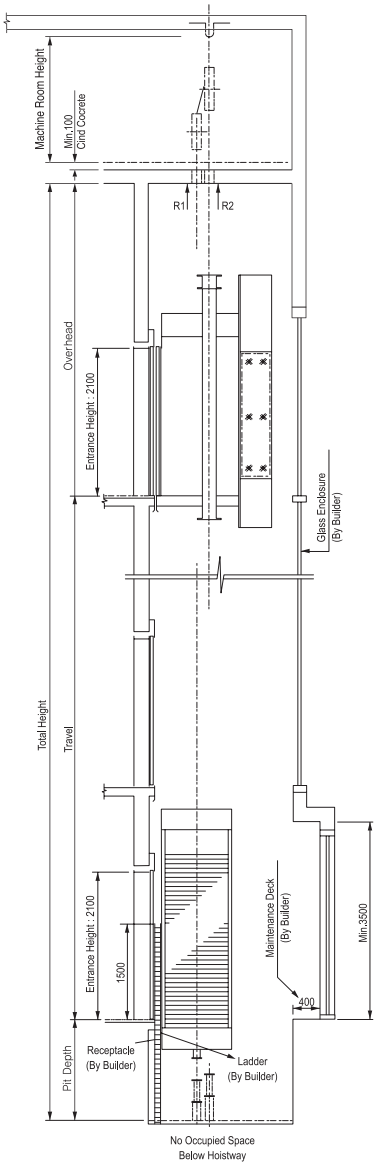
2.0 ~ 2.5	11	750	800	1400×1350	1490×1535	2000×2100	4200×2100	2000×2100	4200×2100	11000	7550	10000	8300
	13	885	900	1600×1350	1690×1535	2200×2100	4600×2100	2200×2100	4600×2100	11000	7550	13250	10100
	15	1025	900	1600×1500	1690×1685	2200×2250	4600×2250	2200×2250	4600×2250	11650	7850	13950	10550
	17	1160	1000	1800×1500	1890×1685	2400×2250	5000×2250	2400×2250	5000×2250	12300	8250	17550	13300
			1100	2000×1350	2090×1535	2600×2100	5400×2100	2600×2100	5400×2100				
	20	1365	1000	1800×1700	1890×1885	2400×2450	5000×2450	2400×2450	5000×2450	13100	8850	18050	13550
			1100	2000×1500	2090×1685	2600×2250	5400×2250	2600×2250	5400×2250				
	23	1565	1100	2000×1750	2090×1935	2600×2500	5400×2500	2600×2500	5400×2500	13900	9350	19550	14350
				2150×1600	2240×1785	2750×2350	5700×2350	2750×2350	5700×2350				

Technical Data | Observation |

Overhead, Pit & Machine Room Height

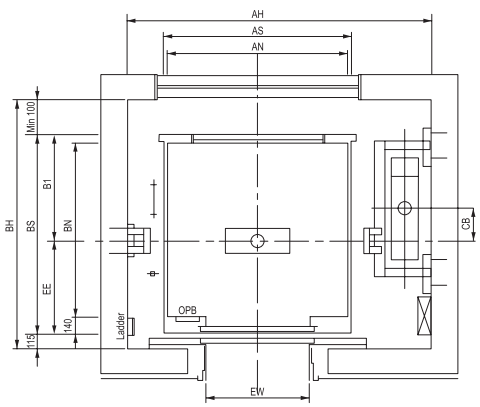
Speed (m/s)	Overhead (mm)	Plt Depth (mm)	Machine Room Height (mm)
1.0	4300	1750	2600
1.5	4500	1900	
1.75	4600	2000	

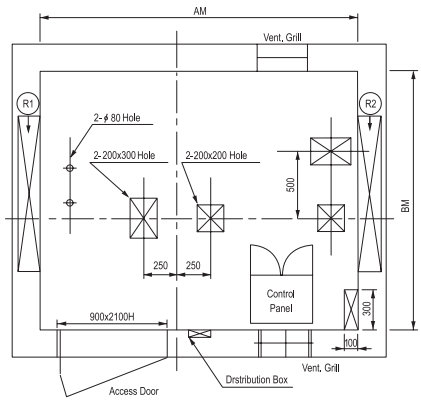
Hoistway Section



1 Side View Observation Elevator Layout (OA)

[Hoistway & Machine Room Plan]





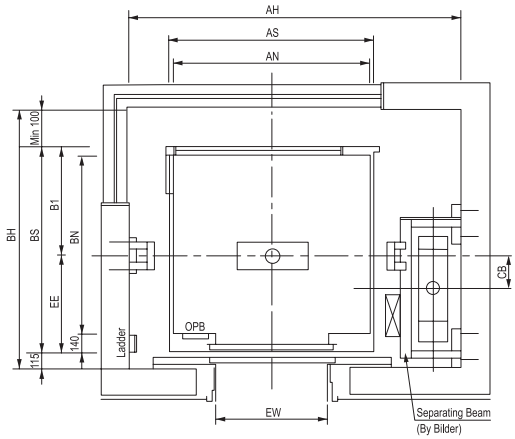
[Layout Dimensions]

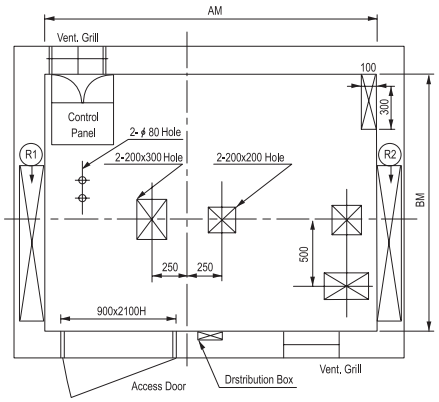
Unit : mm

Speed (m/s)	Capacity		Opening (mm)	Car Size					HoistWay Size				Machine Room Size		Reactions(kg)	
				Inside		Outside										
	Person	Load(kg)		AN	BN	AS	BS	B1	AH	BH	EE	CB	AM	BM	R1	R2
1.0 ~ 1.75	11	750	800	1400	1350	1450	1555	825	2350	1950	730	250	2350	1950	5250	3700
	15	1000	900	1500	1600	1500	1805	1005	2500	2200	850	250	2500	2200	6150	4600
	20	1350	1000	1700	1800	1790	2005	1120	2800	2400	950	272.5	2800	2400	13100	8850
	24	1600	1000	1800	1940	1890	2145	1220	2900	2550	1020	272.5	2900	2550	13900	9350

2 Side View Observation Elevator Layout (OB)

[Hoistway & Machine Room Plan]





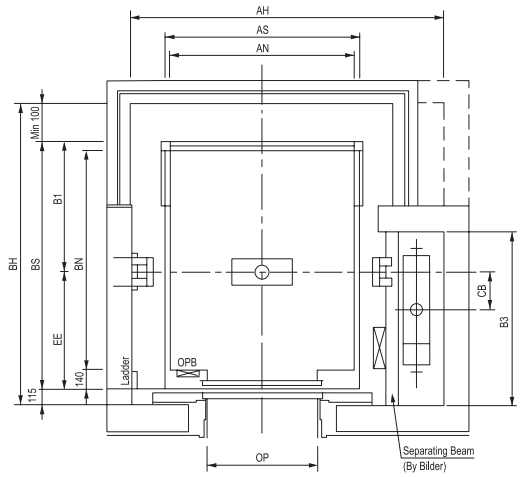
[Layout Dimensions]

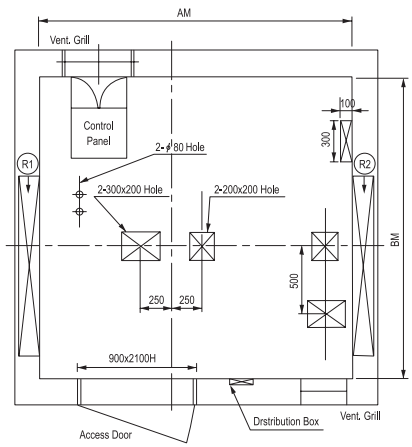
Unit : mm

Speed (m/s)	Capacity		Opening (mm)	Car Size					HoistWay Size				Machine Room Size		Reactions(kg)	
				Inside		Outside										
	Person	Load(kg)		AN	BN	AS	BS	B1	AH	BH	EE	CB	AM	BM	R1	R2
1.0 ~ 1.75	11	750	800	1400	1350	1450	1555	825	2350	1950	730	250	2350	1950	5750	4100
	15	1000	900	1500	1600	1590	1805	955	2500	2200	850	272.5	2500	2200	12300	8250
	20	1350	1000	1700	1800	1790	2005	1055	2800	2400	950	272.5	2800	2400	13900	9350

3 Side Rectangular Observation Elevator Layout (OC)

[Hoistway & Machine Room Plan]





[Layout Dimensions]

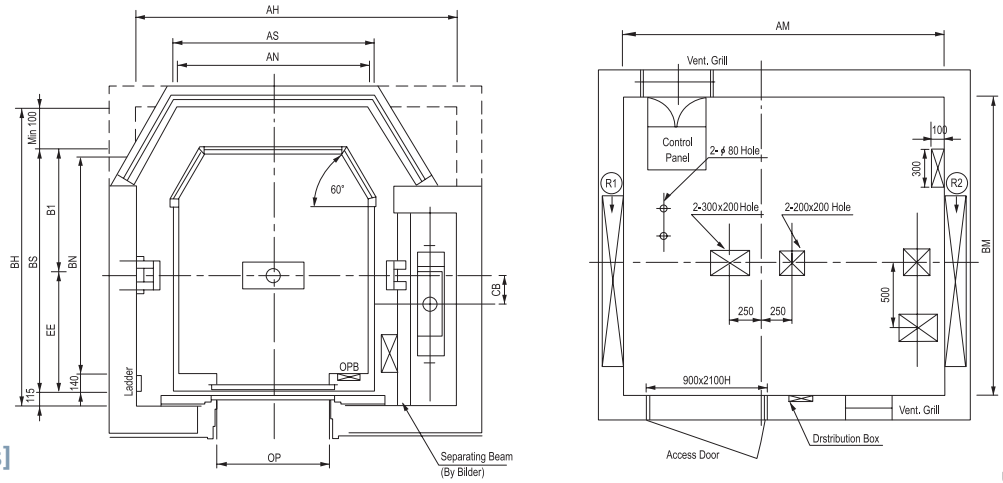
Unit : mm

Speed (m/s)	Capacity		Opening (mm)	Car Size					HoistWay Size				Machine Room Size		Reactions(kg)	
				Inside		Outside										
	Person	Load(kg)		AN	BN	AS	BS	B1	AH	BH	EE	CB	AM	BM	R1	R2
1.0 ~ 1.75	11	750	800	1400	1350	1450	1550	825	2350	1950	730	250	2350	1950	5750	4100
	15	1000	900	1500	1600	1590	1805	955	2500	2200	850	272.5	2500	2200	12300	8250
	20	1350	1000	1700	1800	1790	2005	1055	2800	2400	950	272.5	2800	2400	13900	9350

Technical Data | Observation

3 Side Observation Elevator Layout (OD)

[Hoistway & Machine Room Plan]



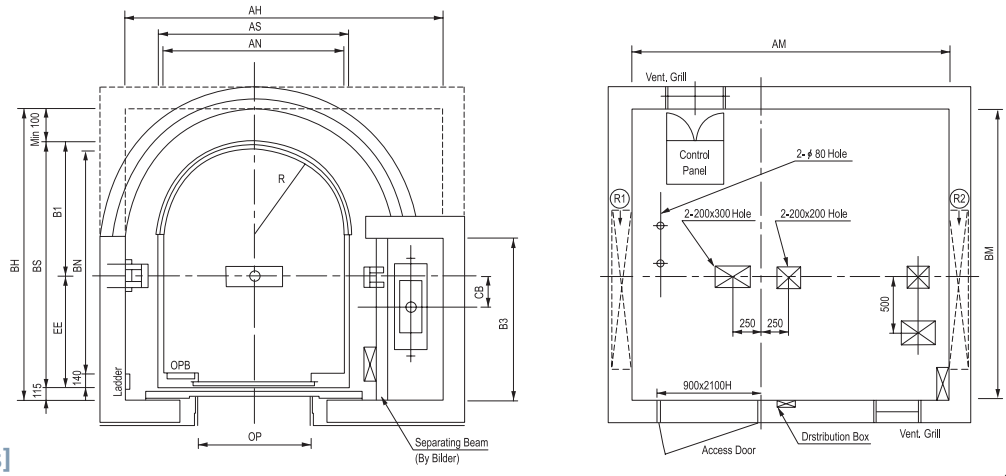
[Layout Dimensions]

Unit : mm

Speed (m/s)	Capacity		Opening (mm)	Car Size					HoistWay Size				Machine Room Size		Reactions(kg)	
				Inside		Outside										
	Person	Load(kg)		AN	BN	AS	BS	B1	AH	BH	EE	CB	AM	BM	R1	R2
1.0 ~ 1.75	11	750	800	1400	1350	1450	1555	825	2350	1950	730	250	2350	1950	5250	3700
	15	1000	900	1500	1600	1500	1805	955	2500	2200	850	250	2500	2200	6150	4600
	20	1350	1000	1700	1800	1790	2005	1055	2800	2400	950	272.5	2800	2400	13100	8850
	24	1600	1000	1800	1940	1890	2145	1125	2900	2550	1020	272.5	2900	2550	13900	9350

Round Observation Elevator Layout (OR)

[Hoistway & Machine Room Plan]



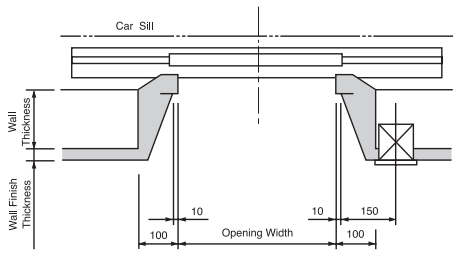
[Layout Dimensions]

Unit : mm

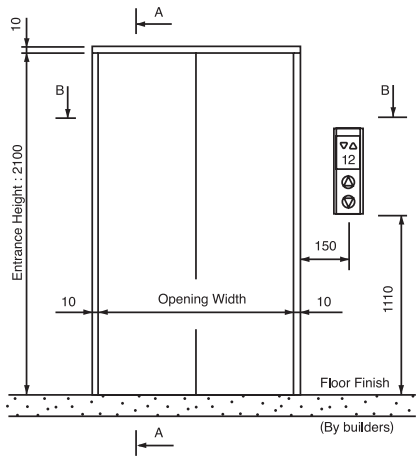
Speed (m/s)	Capacity		Opening (mm)	Car Size						HoistWay Size					Machine Room Size		Reactions(kg)	
				Inside		Outside												
	Person	Load(kg)		AN	BN	AS	BS	B1	R	AH	BH	EE	CB	B3	AM	BM	R1	R2
1.0 ~ 1.75	11	750	800	1300	1600	1350	1805	825	650	2350	2200	800	250	1200	2350	2200	5750	4100
	15	1000	900	1400	1860	1490	2065	955	700	2500	2500	930	272.5	1400	2500	2500	12300	8250
	20	1350	1000	1600	2080	1690	2285	1055	800	2800	2700	1030	272.5	1500	2800	2700	13900	9350

Narrow Jamb without Transom Panel

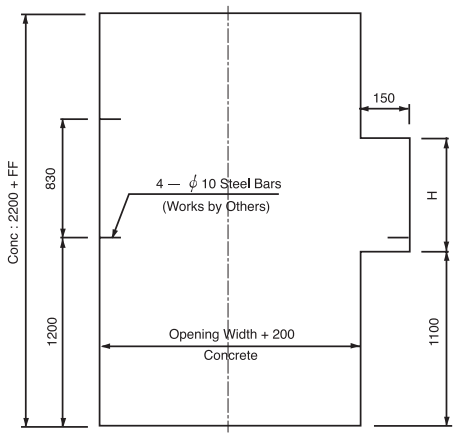
[Section B-B]



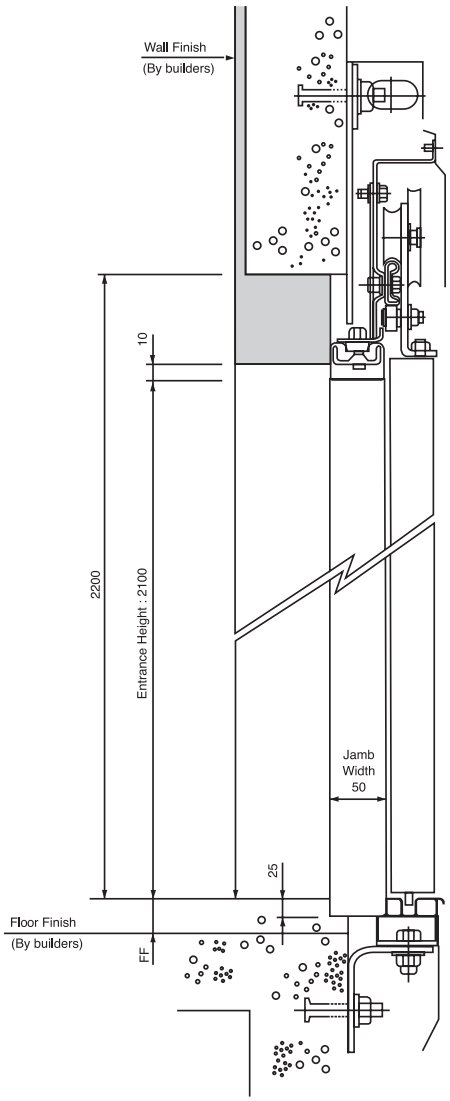
[Front View of Entrance]



[Building Structure Plan]



[Section A-A]

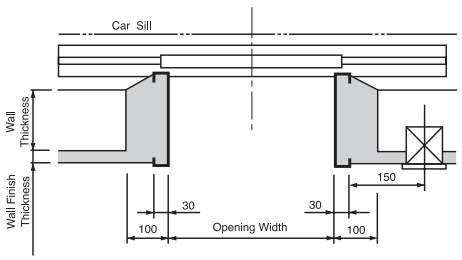


Note

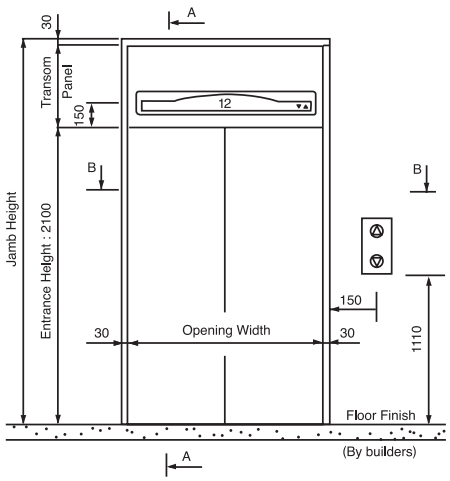
1. "H" dimension in building structure plan depends upon the type of hall indicator selected.
2. Unit : mm

S-Type Wide Jamb with Transom Panel (with accentric line)

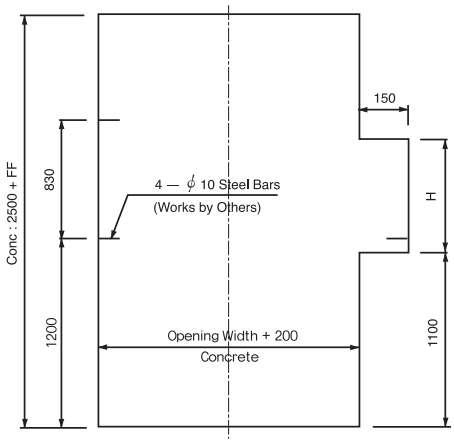
[Section B-B]



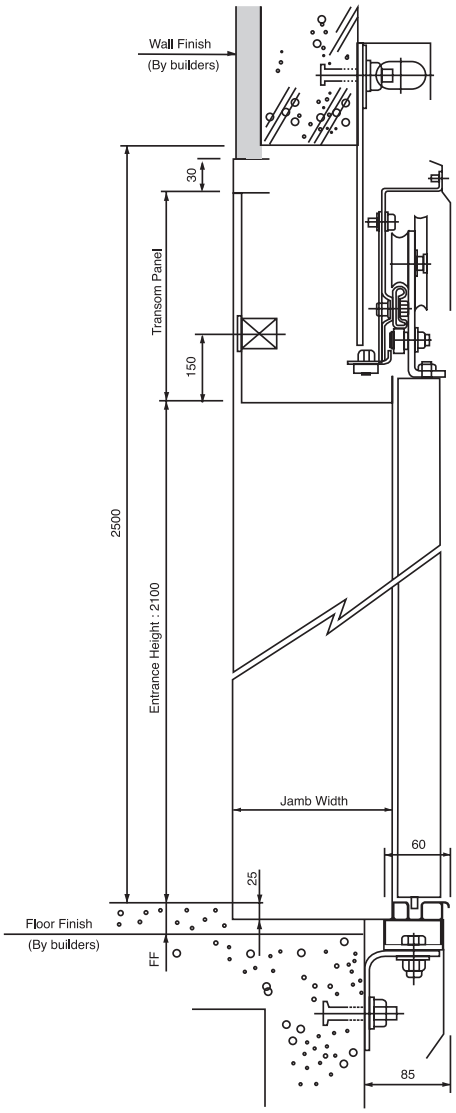
[Front View of Entrance]



[Building Structure Plan]



[Section A-A]

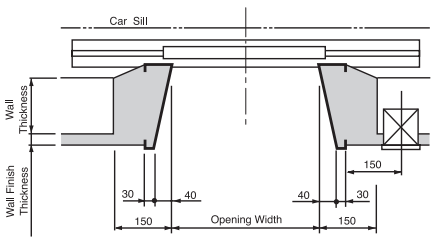


Note

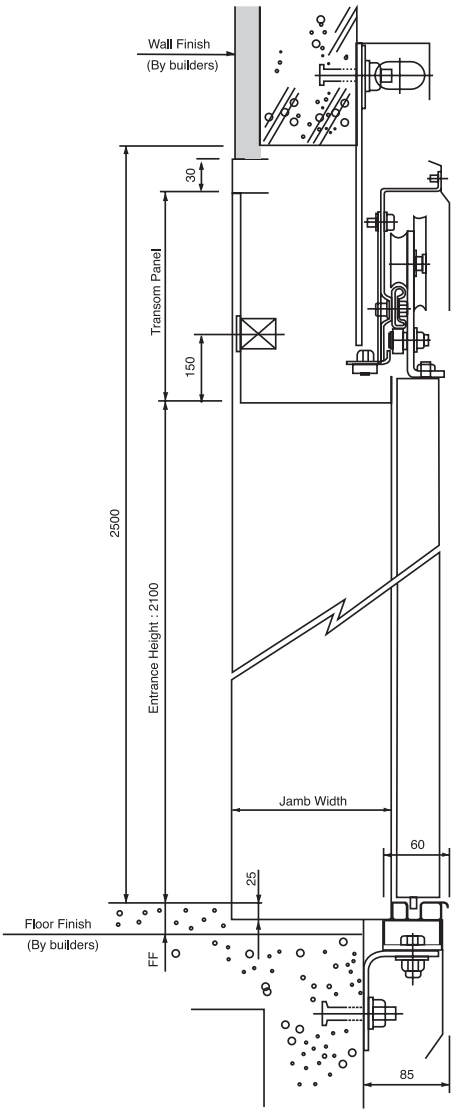
1. "H" dimension in building structure plan depends upon the type of hall indicator selected.
2. Unit : mm

T-Type Wide Jamb with Transom Panel (with accentric line)

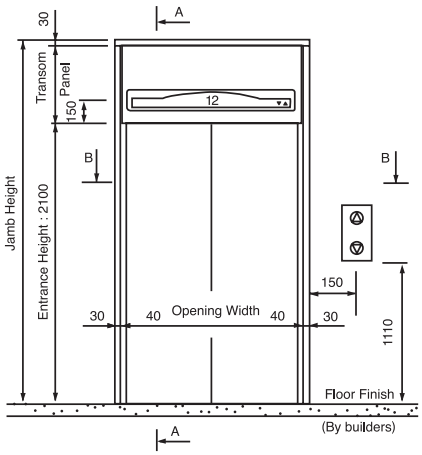
[Section B-B]



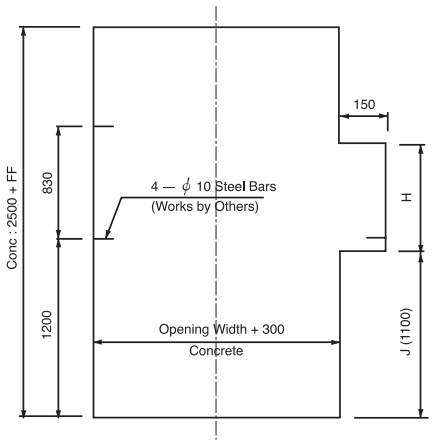
[Section A-A]



[Front View of Entrance]



[Building Structure Plan]



Note

1. "H" dimension in building structure plan depends upon the type of hall indicator selected.
2. Unit : mm

Technical Data | Passenger |

Power Supply Plan

[Speed 1.0 ~ 1.75 m/s]

220V / 400V

Speed (m/s)	Capacity		Motor Capacity(kW)	MCCB Capacity(A)		Transformer Capa.(kVA)		Lead-in Wire Size(mm²)		Earth Wire Size(mm²)	Heat Output (kcal / H)	Starting Power(kVA/set)
	Persons	Load(kg)		Simplex	Duplex	Simplex	Duplex	Simplex	Duplex			
1.0	6	450	5.5	35 / 16	60 / 32	6.0	11.9	8.0 / 4.0	16.0 / 6.0	6	645	7.3
	8	550	5.5	35 / 16	50 / 32	6.0	11.9	8.0 / 4.0	16.0 / 6.0	6	785	7.3
	9	600	5.5	35 / 16	60 / 32	6.2	12.5	8.0 / 4.0	16.0 / 6.0	6	860	7.7
	10	680	5.5	40 / 20	80 / 40	6.9	13.8	8.0 / 4.0	16.0 / 6.0	6	975	8.7
	11	750	5.5	50 / 25	100 / 50	7.8	15.6	8.0 / 4.0	16.0 / 6.0	6	1145	10.0
	13	900	6.7	50 / 25	100 / 50	8.4	16.8	8.0 / 4.0	16.0 / 6.0	6	1285	10.9
	15	1000	6.7	50 / 25	100 / 50	9.1	18.1	8.0 / 4.0	22.0 / 8.0	6	1430	11.9
	17	1150	8	60 / 32	125 / 63	10.9	21.9	16.0 / 6.0	22.0 / 8.0	6	1645	14.7
	20	1350	9.3	80 / 40	125 / 63	12.3	24.7	16.0 / 6.0	38.0 / 16.0	6	1930	16.8
	24	1600	11	80 / 40	150 / 80	14.1	28.2	16.0 / 6.0	38.0 / 16.0	6	2285	19.5
1.5	8	550	8.3	50 / 25	100 / 50	8.1	16.2	8.0 / 4.0	22.0 / 8.0	6	1180	10.5
	9	600	8.3	50 / 25	100 / 50	8.6	17.2	8.0 / 4.0	22.0 / 8.0	6	1285	11.2
	10	680	8.3	60 / 32	125 / 63	9.5	19.0	8.0 / 4.0	22.0 / 8.0	6	1460	12.6
	11	750	8.3	60 / 32	125 / 63	10.8	21.5	16.0 / 6.0	22.0 / 8.0	6	1715	14.5
	13	900	10	60 / 32	125 / 63	11.6	23.1	16.0 / 6.0	22.0 / 8.0	6	1930	15.7
	15	1000	10	80 / 40	150 / 80	12.6	25.1	16.0 / 6.0	38.0 / 16.0	6	2145	17.2
	17	1150	12	100 / 50	200 / 100	15.1	30.2	22.0 / 8.0	38.0 / 16.0	6	2465	21.0
	20	1350	13.9	100 / 50	200 / 100	17.2	34.3	22.0 / 8.0	38.0 / 16.0	6	2895	24.0
	24	1600	16.5	125 / 63	250 / 125	19.8	39.6	22.0 / 8.0	50.0 / 25.0	6	3430	28.0
1.75	8	550	9.6	80 / 32	125 / 63	9.9	19.8	16.0 / 6.0	22.0 / 8.0	6	1375	13.2
	9	600	9.6	80 / 32	125 / 63	10.5	21.0	16.0 / 6.0	38.0 / 16.0	6	1500	14.1
	10	680	9.6	80 / 32	125 / 63	11.5	23.0	16.0 / 6.0	38.0 / 16.0	6	1700	15.6
	11	750	9.6	100 / 40	150 / 80	13.1	26.2	16.0 / 6.0	38.0 / 16.0	6	2000	18.0
	13	900	11.7	100 / 40	150 / 80	14.1	28.2	16.0 / 6.0	38.0 / 16.0	6	2250	19.5
	15	1000	11.7	100 / 50	200 / 100	15.3	30.6	22.0 / 8.0	38.0 / 16.0	6	2500	21.3
	17	1150	14	100 / 50	200 / 100	17.3	34.5	22.0 / 8.0	38.0 / 16.0	6	2875	24.2
	20	1350	16.2	125 / 63	225 / 125	19.7	39.3	22.0 / 8.0	50.0 / 25.0	6	3375	27.8
	24	1600	19.3	125 / 63	250 / 140	22.6	45.3	38.0 / 16.0	50.0 / 25.0	6	4000	32.3

[Speed 2.0, 2.5 m/s]

220V / 400V

Speed (m/s)	Capacity		Motor Capacity (kW)	MCCB Capacity of Building(A)		Power Supply Capacity(kVA)		Lead-in Wire Size(mm²)		Earth Wire Size (mm²)	Heat Output (kcal / H)	Starting Power (kVA/set)
	Persons	Load(kg)		Simplex	Duplex	Simplex	Duplex	Simplex	Duplex			
2.0	11	750	11	60 / 40	125 / 75	13	25	38 / 8	60 / 14	8	2285	25
	13	900	13.5	60 / 40	125 / 100	14	27	38 / 8	60 / 14	8	2570	27
	15	1000	13.5	75 / 50	150 / 100	16	31	38 / 8	60 / 14	8	2860	29
	17	1150	16	100 / 50	175 / 100	18	36	38 / 8	100 / 22	8	3300	32
	20	1350	18.5	100 / 60	200 / 125	21	42	38 / 8	125 / 30	8	3860	36
	24	1600	22	125 / 75	225 / 150	25	50	50 / 14	150 / 38	14	4575	41
2.5	11	750	13.5	75 / 50	150 / 100	16	31	38 / 8	60 / 14	8	2860	32
	13	900	17	175 / 50	150 / 100	18	35	38 / 8	100 / 22	8	3215	35
	15	1000	17	100 / 60	175 / 125	20	39	38 / 8	100 / 22	8	3575	38
	17	1150	20	125 / 75	200 / 125	23	45	50 / 14	125 / 30	14	4110	42
	20	1350	23	125 / 75	225 / 150	26	52	50 / 14	150 / 38	14	4825	47
	24	1600	27.5	150 / 100	300 / 175	31	62	38 / 14	150 / 38	14	5715	54

Note

1. The wire size should be calculated considering the voltage drop when travel exceeds 100m.

Technical Features

[Operation Functions]

● Standard ○ Option

Features	Description	
Attendant Operation	The operating mode of an elevator can be changed from the normal automatic operation to the attendant service by an attendant switch.	●
Independent Operation	Key switch in the car operating panel will cancel any existing car calls and hold the door open at the landing position. During independing operation, the car will respond only to car calls.	●
Back-up Operation	When Electrical transmission device between hall call and control panel comes into the abnormal condition and it lasts during some period, elevator control device is converted to Back-up operation automatically. Then, the elevator moves in sequence up and down repeatedly from top to bottom floor to service every other floor which is in normal condition.	●
Safe Drive Operation	When a car stops between floors due to mechanical malfunction, it will descend to the nearest floor at a low speed and hold the doors open after checking all safety measures.	●
Car Call Cancellation	Allows cancellation of an incorrectly registered car call. If you push a wrong floor button in the car, you can cancel it by pressing that floor button one more time.	●
Automatic Turn-Off of Car Light & Fan	Car illumination and fan are turned off automatically in case there is no hall call or car call, this saves energy.	●
Automatic Bypass	A fully-loaded car (More than 80% of rated load) bypasses hall calls in order to maintain maximum operational efficiency.	●
Overload Holding Stop (110% of rated load)	When the number of passengers exceeds the normal capacity, a buzzer sounds and the elevator remains stopped at that floor. When the excessive number of passengers disembark, the buzzer stops, the elevator doors close, and operation continues.	●
Detection of Jammed Hall Button	If a hall button is jammed mechanically, the hall call will be automatically bypassed after being served once, until the program is resolved.	●
Car Door Safety Edge	Extending the full height of the car door, this decice causes the doors to return to the fully open position, should the door encounter a person or obstacle while closing.	●
Micro Levelling	An automatic two way levelling device is provided to maintain the elevator car level with the landing, regardless of elevator load or direction of travel.	●
N-Plex Operation	It can control up to 4 sets of elevators to optimize allocation of hall calls.	○
Non-Stop Operation	Specific floors which are memorized in control panel can be set to disable using switch on car operating panel or in security room.	○
Parking Operation	The elevator can be automatically parked at the predetermned floor with its door closed, as well as turn off the lights and ventillation.	○
VIP Operation	The specified elevator is controlled by the special call buttons provided only for VIP elevator	○
Emergency Power Operation	If normal building power supply fails and the building provides emergency power to the controller(s), one elevator at a time will proceed to the lowest landing where it will stop with doors open and with all of its power and operating circuit in an inoperative standby condition.	○
Fire return operation	In case of fire, every car should be returned to the specified floor in order to evacuate pasengers to safety.	○
Firemen Operation	In case of fire, a firemen can use the elevator which is stopped at the specified floor in order to support firemen for fire-fighting.	○
Anti-nuisance Operation	In case of substantial difference between the number of calls registered on the car operating panel and actual load in the elevator, the elevator prevents unnecessary operation by cancelling all registered calls when it arrives at the nearest floor.	○
Door Nudging	When the doors remain open for more than the fixed door open time, this feature closes the doors at reduced closing speed with the buzzer sounding.	○
Voice Synthesizer	This system provides riding passengers with audio information about car operation such as direction of travel, landing floor, etc.	○
Door Photo Sensor	The doors reverse to fully open position if the light ray unit detects an obstacle when the doors are closing.	○

Technical Data

Work by Others

The works below are not included in the elevator installation work and should be carried out by building contractors in accordance with our drawings, relevant international or local codes and regulations.

Hoistway

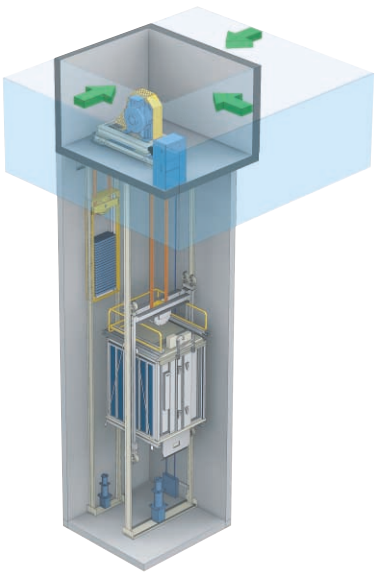
- A properly framed and enclosed hoistway, including any venting as requried by the governing code or authority.
- A dry pit constructed to the elevator manufacturer's specifications to reinforce or sustain any vertical forces on the guide rails and impacted loads from the car and counterweight buffers.
- A metal sill angle or concrete haunch across the full width of the hoistway at each elevator landing.
- Provision of steel bars to fix jamb around the entrance of each floor.
- All cutting, including cutouts to accommodate hall singal fixtures, patching, painting of walls, floors, or partitions, together with finish painting of entrance doors and frames, if required.
- Provision of entrance or ladder for pit access
- Supply and installation of fascia plate.
- Installation of emergency exits and electric wiring in blind sections of hoistway where required.
- The tolerance of perpendicular line over the whole hoistway height must not exceed ±30mm.
- A waterproof outlet and light fixture in the elevator pit area with the light switch being located adjacent to the access door or ladder.
- Suitable light fixture and convenience outlet in the pit with a light switch adjacent to the access door or ladder. The receptacles shall have protection for ground fault circuit interrupter.

Machine Room

- Provision of wiring between controller and building management system.
- A construction hoisting beam or hook, if required, with the correct location and size as determined by the elevator contractor for each hoistway.
- Noise insulation should be installed between machine room and adjacent residential area.
- A suitable machine room with legal access, ventilation and concrete floor.
  The temperature in the machine room should be maintained between 5℃ and 40℃.
  Relative humidity should not exceed 90%(monthly) and 95%(daily) non-condensing.
  Ventilation fan or Air conditioner should be provided as per heat dissipation by the elevator contractor.
- The size of entrance shall be Min.1000mm(W) x 2000mm(H).
- Installation of lead-in wire and earth wire between building main power board and machine room incoming distribution board. However, machine room lighting source supply shall be installed separately.
- Provision of suitable light fixture and convenience outlets in the machine room

Miscellaneous

- Wiring and piping between monitoring system.
- Machine room and hoistway shall be free of dust or harmful gas.
- All electric power for lighting, tools, welding, etc during installation.
- All single phase receptacles installed in machine rooms, pits, and machinery spaces shall have ground fault circuit interrupter protection.
- Fire detector for fire emergency operation.
- A secured area for stroage of elevator equipment and materials during installtion.



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